

WHAT IS CLAIMED IS:

- 1 1. In a power plant utilizing a process to remove components harmful to the atmosphere
2 from a stream of flue gas, wherein said process includes the injection of a vaporized
3 aqueous mixture in the stream of flue gas, the improvement comprising:
4 a vaporization chamber pre-heated to a vaporization temperature in order to
5 vaporize said aqueous mixture prior to the injection thereof into said stream of flue gas,
6 said vaporization chamber being pre-heated by an independent heat source.
- 1 2. The power plant according to claim 1 wherein said independent heat source is a band
2 heater.
- 1 3. The power plant according to claim 1 wherein said independent heat source is a blanket
2 heater
- 1 4. The power plant according to claim 1 wherein said independent heat source is an electric
2 heat tracing apparatus.
- 1 5. The power plant according to claim 1 wherein said independent heat source is an steam
2 heat tracing apparatus.
- 1 6. The power plant according to claim 1 wherein said aqueous mixture comprises ammonia
2 in the range of less than 29% by volume and the balance being water.
- 1 7. In a power plant utilizing a process to remove components harmful to the atmosphere
2 from a stream of flue gas, wherein said process includes the injection of a vaporized
3 aqueous mixture in the stream of flue gas, the improvement comprising:

4 a vaporization chamber pre-heated to a vaporization temperature in order to
5 vaporize said aqueous mixture prior to the injection thereof into said stream of flue gas,
6 said vaporization chamber being pressurized from an air assembly and being pre-heated
7 by an independent heat source.

1 8. In the power plant of claim 7, said air assembly comprising a diffusing air fan in
2 communication with an electric heater.

1 9. A process to remove components harmful to the atmosphere from a stream of flue gas
2 comprising:

- 3 a. pre-heating a vaporization chamber via an independent heating source to a
4 vaporization temperature;
- 5 b. introducing an aqueous mixture into said vaporization chamber thereby causing
6 the aqueous mixture to vaporize;
- 7 c. injecting said vaporized aqueous mixture into a stream of flue gas creating an
8 aqueous mixture/flue gas mixture; and
- 9 d. passing said aqueous mixture/flue gas mixture over a catalyst.

1 10. The process of claim 9 further comprises maintaining said pre-heated vaporization chamber
2 at said vaporization temperature via a convection process.

1 11. The process of claim 9 wherein said aqueous mixture comprises ammonia in the range of
2 less than 29% by volume and the balance being water.